

SUPPORT FOR THE AMENDMENTS

Support for claims 14 and 17 is found in claim 11 as originally presented. Support for claim 15 is found in claim 12 as originally presented. Support for claim 16 is found in claims 7 and 11 as originally presented. Support for claim 18 is found in claim 13 as originally presented. No new matter would be added to this application by entry of this amendment.

Upon entry of this amendment, claims 1-5, 7, 9, 11-12 and 14-18 will now be active in this application.

REQUEST FOR RECONSIDERATION

The claimed invention is directed to a water-based ink.

Applicants wish to thank examiner Shosho for the helpful and courteous discussion held with their U.S. representative on May 8, 2006. At that time, applicants' representative argued that Akers, Jr. et al did not disclose or suggest particles of water-insoluble polymer. The following is intended to expand upon the discussion with the examiner.

Applicants also wish to thank examiner Shosho for indicating that claims 9 and 11-12 are allowable. Claims 14-17 have been presented based on original claims 11 and 12 and are believed to be allowable. Independent claim 16 and dependent claim 17 thereon are believed to be in condition for allowance.

Water-based inks have gained increased popularity in recent times, especially for use in ink-jet printing. Performance properties as to water resistance, light fastness, rubbing density and optical density while maintaining good jetting properties remain desirable properties.

The claimed invention addresses this problem by providing a water-based ink based on a water-insoluble polymer having at least two hydroxyl groups at its end or an ionic group

at its end which is derived from a chain transfer agent or an iniferter. Applicants have discovered that such particles of such polymers provide for water-based inks of desirable performance. Such water-based inks are nowhere disclosed or suggested in the cited prior art of record.

*Claims 1-5*

This embodiment of the claimed invention is directed to a water-based ink comprising a colorant consisting essentially of a pigment and a **water-insoluble polymer** having at least two hydroxyl groups at its end.

Akers Jr. et al. fails to disclose an ink comprising a pigment contained in particle of a water-insoluble polymer.

Akers Jr. et al. describe an ink composition in which insoluble pigment particles are dispersed with a polymer (column 2, lines 8-15). The polymers comprise at least a hydrophilic segment and a hydrophobic segment (column 4, lines 22-25). The stabilized pigment is prepared by mixing the pigment with a dispersant **solution** prepared by dissolving the polymer dispersant in deionized water (column 10, lines 26-35). Thus, the dispersant polymer is clearly water soluble as a solution of water is used to combine the pigment with the dispersant polymer.

In contrast, the claimed invention is directed to an ink in which pigment is contained in particles of water-insoluble polymer. Since the reference does not suggest particles of water-insoluble polymer, the claimed invention is clearly not obvious from this reference and withdrawal of the rejection under 35 U.S.C. 103(a) is respectfully requested.

*Claims 7-10*

This embodiment of the claimed invention is directed to a water-based ink comprising a water-insoluble polymer having an ionic group at its end and a pigment, wherein the ionic group is derived from a chain transfer agent or an iniferter.

The rejections of claim 7 and 13 as anticipated under 35 U.S.C. §102(e) by Miyabayashi U.S. 6,864,302 and of claims 7 and 13 as anticipated under 35 U.S.C. §102(e) by Miyabayashi U.S. 6,602,333 are respectfully traversed.

Neither Miyabayashi reference discloses or suggests a water-based ink in which the water-insoluble polymer has an ionic group at its end which is derived from a chain transfer agent or from a iniferter.

Both Miyabayashi references have been cited for a disclosure of the preparation of a polymer **from an initiator** which has an ionic group (column 24, lines 49-61 of Miyabayashi U.S. '302 and column 22, lines 44-47 of Miyabayashi U.S. '333). There is no particular import to the initiator having an ionic group, only that the initiator is a water-soluble radical polymerization initiator (column 24, lines 49-50 of Miyabayashi U.S. '302) citing other initiators which do not have an ionic group as also suitable. As such, the disclosure of the use of a water-soluble initiator which may have an ionic group does not suggest using a ionic group containing chain transfer agent or iniferter in the preparation of a water-insoluble polymer for a water-based ink.

In contrast, the claimed invention is directed to a water-based ink comprising a water-insoluble polymer having an ionic group at its end and a pigment, wherein the ionic group is derived from a chain transfer agent or an iniferter. Applicants note that claim 7 has been amended to recite that the ionic group is derived from a chain transfer agent or an iniferter.

As the cited reference does not describe an ink comprising a pigment-containing water-insoluble polymer having an ionic group which is derived from a chain transfer agent

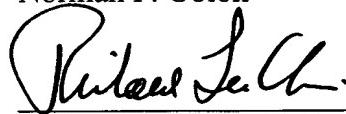
Application No. 10/602,614  
Reply to Office Action of April 4, 2006.

or an infirter, the claimed invention is clearly neither anticipated nor made obvious by these references and withdrawal of the rejections under 35 U.S.C. §102(e) is respectfully requested.

Applicants submit that this application is now in condition for allowance and early notification of such action is earnestly solicited.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,  
MAIER & NEUSTADT, P.C.  
Norman F. Oblon



---

Richard L. Chinn, Ph.D.  
Attorney of Record  
Registration No. 34,305

Customer Number  
**22850**

Tel: (703) 413-3000  
Fax: (703) 413 -2220  
(OSMMN 06/04)  
RLC/rac